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THE WORLD'S BIGGEST COMPUTER MAGAZINE

WESTERN DIGITAL HOLDS A WINNING HAND WITH THE WD30-WDM SYSTEM

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PUBLISHER—Stan Veit
EDITORIAL
EDITOR-IN-CHIEF—Stan Veit
ASSOCIATE EDITOR
John J. Anderson
TECHNICAL EDITOR—Ted Drude
ASSISTANT EDITOR—Chris Portch
EDITORIAL ASSISTANT—Patti Dixon

CONTRIBUTORS
Dr. Ron Albright, Lon Andrews
Jeff Brenner, Phillip Chien
Don Lancaster, Cheryl Peterson
Mark Fendrick, Ervin Bobo
Ronald Bobo, Andrew Fried
Johnathan Zittrain, Peter Ruber,
Barbara & John McMullen
Hal Nieburg, D.F. Scott
Ronny Richardson, Fred Blechman

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Candace Cardonia, Susan Morris,
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Jason Register, John Hannah

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ACCOUNT EXECUTIVES
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ATARI ST

Atari ST News

by John Nagy

We're back with Atari ST news and rumors, hots and nots, grumblings and praise. (For more Atari related material, check out my similar column especially for the Atari 8-bit owners, in the "Classic Computers" section elsewhere in this issue!)

Continued product announcements from Atari includes more demos of their Compact Disk ROM, sporting 540 megabytes of storage plus full audio disc compatibility. It's already available for developers, and might be available at retail outlets (at $599) in late spring. Cleverly set up to support three different "standard" formats (since nobody knows which will "win"), it even has an IBM interface card included for MSDOS users. Now if Atari can really just get the thing out in a timely fashion, the market is wide open. Remember the incredible deal the Laser Printer was going to be? Two years later, when it finally arrived, the price was up (not a lot) but the competition had already produced and undercut.

Another long-rumored machine may be edging out of the deepest of the vapor. Atari indicated that they would show a 68030 machine at the Hanover Fair in Germany, and hopes to see market with it yet in 1988!

Sony might scoop the workstation/mighty mini market planned for the Atari Abaq if that "transputer" is too delayed. Sony has shown a prototype 68020-based multi-processor transputer machine that does indeed look like competition for the $5,000 Abaq. But at Sony's reported $25,000 pricing, Atari could certainly have some advantage, if it can be bought before "Joe's Corner Transputer Store" has clones at $3,000.

Atari's plans to build and operate a high-tech manufacturing center in the southwest U.S hit a snag due to government controls on Memory Chips being imported into the states. It seems that U.S. suppliers simply can't get production up and prices down, making it non-competitive to build computers domestically. If Dram manufacturers can get going stateside or if the foreign trade regulations ease, the plant plans are back on, says Neil Harris.

Atari Corp is reporting a good year of sales and profits for 1987, with a net operating income of 44 million dollars, up from 25 million in 1986. Computers made up 51% of total Atari sales (games, the remainder...) and the losses still carried forward from prior years are now almost completely cancelled. Additional losses from the Federated Electronics stores chain, purchased last year by Atari, are being controlled and are expected to turn around or break even in 1988. Computer sales in Europe and video-game sales in the U.S. have continually improved, although the price of Atari Corp stock has not moved markedly from the $6-7 mark it fell to in October last year.

Unconfirmed rumors report that Atari may extend its warranty from the current 90 days on all equipment up to a full year! Although this would seem a boon to buyers, it might even worsen the almost adversarial position of dealers vs Atari. It is an expensive proposition to be an Atari repair center, and requires a commitment to fix anyone's machine, regardless of mail order or dealer bought. Adding 9 months to the warranty period, plus a "Company policy" to assure 48 hour repairs on Mega machines may well chase more of the already scarce dealer/service centers out of the market. Let's hope Atari can better their dealer relations.

Neil Harris is/has been the Marketing Information man at Atari for several years, and has patented the phrase "Two Weeks," used profusely to describe release dates of Atari announced products. Mr. Harris absorbs the brunt of most complaints (there are many) about Atari in general, and is faced with the not enviable job of running interference for a company whose announced intentions habitually run short of its abilities. Neil gets to tell us what is coming, and then tell us why it didn't come. Anyway, Neil has now taken on the job of East Coast and Midwest Sales Representative for Atari, leaving his duties as Info man somewhat uncertain. He continues to do both, but that may change.

Atarifests continue to give user groups headaches, despite also being potential big money makers (the Detroit show mentioned earlier brought thousands of dollars profit for the clubs to divide). However, some clubs have this note to planners: a recurring theme in the post-mortums of Atarifests is the Hybrid Arts blues. Alan Glick of Jackintosh Bostin Users Group (J-Bug) reports that while overall profiting about $4,000 at their Atarifest, that Hybrid Arts has failed to pay nearly $1,000 for their two booths, ads, etc, despite more than four sets of invoices and many phone calls. Now, says Alan, H.A. even denies that they were at the fest! Hybrid Arts puts on a popular MIDI-Maze game and offers nice prizes at Atarifests—let's hope they get it together before they become an outsider.

On the outside at a November Florida Atarifest was Best Electronics, a California based junque/parts/oddity/Atari paraphernalia peddler that has run afoul of Data Pacific, makers of the Magic-Sac Macintosh emulator. Says David Small of Data Pacific, Best has continually been promoting their pirated set-up to replace the Magic-Sac, even down to offering printed instructions on how to build your own SAC and avoid paying for David's work. Best offers some wonderful and hard to find items, and pressure was high to keep them in the Atarifest lineup, but organizers of the Sun*Atari show in Palm Beach, Florida, stood fast and refused Best booth space. David says he is gratified at the show of anti-piracy

continued on page 363

The ST Control Panel—1987 In Review

by D. F. Scott

From time to time here in the ST section of *Computer Shopper* we'll ask the opinions of five individuals whose companies represent the mainstream of third-party ST hardware and software development. They are:

John S. DeMar, president, Quantum Microsystems Inc., an independent author and manufacturer of DeskCart, ST-Talk, and the QMI Graphics Tablet.

Frank Cohen, president, Regent Software, author of Regent Base, and manufacturer of The Informer and Regent Word II.

David Beckemeyer, president, Beckemeyer Development Tools, manufacturer of VSH Manager, Micro C-Shell, and Micro RTX.

Gordon Monnier, president, Michtron distributor for GfA and Microdeal products, and manufacturer of Cornerman, MichTron BBS, and R.A.I.D.

Daniel L. Moore, Co-partner, Data Pacific, manufacturer of Magic Sac and Translator One Macintosh emulation equipment; author of SynCalc and PaperClip.

We asked our Control Panel five questions related to issues currently debated among Atari loyalists, and recorded their answers on tape. They are presented here verbatim following each question as it was presented to them.

Question One: One of the frequent statements heard from long-time ST owners is that the general quality of the software does not yet match that of software in the PC realm. Do you think that's true; if not, where can we find the good software; if so, what can be done to improve the current state of ST software?

Frank Cohen: It's true that the IBM software market is much more mature than the ST software market. Time heals all problems. The state of software development in the ST market is similar to that in the infancy age of the IBM PC. This goes back to the days where the only thing you could run on an IBM PC was Microsoft BASIC. Products like dBase III or even dBase II weren't really available for the machine then. The product that really made the IBM PC could be considered Lotus 1-2-3, or Ashton-Tate's dBase products although there are a number of other examples. Those products haven't emerged into the ST market mostly because it is still quite small, and software development costs are high compared to the state of [illegible]n.

The other problem i[illegible]s no confidence or assurance from Atari that they intend to fully [illegible]ket t[illegible] to their full potent[illegible] fanning back an[illegible] ferent projects, [illegible] never really coming out with a completed system like Apple or IBM.

David Beckemeyer: I think the common concensus is partially true. I think that there is an abundance of less-than-the-highest-caliber software available, but I also feel there are some good packages. I think less than a dozen companies are producing really good software, and who knows how many beyond that are producing mediocre stuff. My feeling is that a lot of the products you see are like "pilot" packages. They're not all that practical. They're showing something perhaps very sophisticated, and they sound very nifty, but in reality the truth is they're "kind of" nifty—exactly that—but never something that's going to be used in the real world. I think if you're looking at real-world solutions, there's probably less than half a dozen companies producing truly real-world usable software in a business environment, that performs acceptably well.

Gordon Monnier: Word processors [illegible]dsheets are not of the same [illegible]n the IBM. Two reasons for [illegible] even though the computer [illegible] two [illegible]s old, [the ST] is still a new technology, a new design; and people [illegible]n't gotten it up to the same quality [illegible] It will happen. With WordPerfect [illegible]ut, and some of these other

[illegible]inued on page 366

FTL Warps Two To The Top Of The Charts

by D.F. Scott

The late Ken Uston used to divide video game aficionados into two categories: those who play a game for the safety of knowing its internal pattern, and those who play for the danger of not knowing the pattern. I believe Ken referred to them as, respectively, "Pac-men" and "Defender freaks." Ken was a self-proclaimed "Pac-man," a master of pattern memorization. Even if you hadn't read his work in *Creative Computing*, you may have seen him on 60 Minutes being thrown out of Las Vegas casinos because he could estimate the value of cards on the Blackjack table with his fingers and toes.

Although I never met the man, Ken Uston's game reviews made me feel like I knew him just a bit. Ken made the game review into a work of art, taking me through each program like a passenger in a long, winding tunnel. Although I've always been more of an "apprentice defender" than a man who plays the patterns, I couldn't help but be reminded of Ken when the game company FTL simultaneously released Oids and Dungeon Master—a Defender/Asteroids/ Choplifter blend and a maze tunnel game, respectively. It was the first instance to my memory in which the same team of software authors released programs of both Uston genres at the same time.

Many of you ST game players by now are well aware that Dungeon Master and Oids are perhaps the biggest selling ST programs in history; some California software stores reported selling 50 to 100 Dungeon Masters per day. Both games had received advance publicity for over six months; and the name FTL (Faster Than Light) was already cast in stone after the success of the first ST blockbuster game ever, SunDog. The odds against these games' success would be so minescule as to be incalculable even by Ken Uston.

I felt it appropriate, therefore, to dedicate this review to the memory of Ken Uston, who passed away last year, and who gave me many enjoyable hours of off-the-wall metaphors on lunch breaks under the elm tree of the library where I worked, reading *Creative* with my over-sauced cheeseburgers and ever-present Dr. Pepper. Ken would've loved Dungeon Master.

What's Behind Door #3 For Fred The Wizard?

Frankly, I expected less of Dungeon Master. I do not share my friends' passion for "Dungeons & Dragons" or any other imaginary battle with another person's whimsy. I find epic tales of dark caverns and scaly dragons with passions for blondes altogether unenlightening. I've had more than my share of bad experiences with people who call themselves dungeon-masters, such as the argument over whether a "good" character should kill something that's "evil" if what makes the evil thing evil is the fact that it kills.

I saw the forerunner of FTL's Dungeon Master ten years ago on a 3M Plato terminal which was supposedly set up for teaching purposes at a medical school. The premise of this game was fairly identical to FTL's modern equivalent: You're trapped in an underground labyrinth with a bunch of creatures from Gothic folk tales, all of whom are dutifully guarding hidden rooms full of more treasures than you'll find in a Mexican flea market on a Sunday. Your job is to merrily hack your way through all the creatures, procure whatever keys or items of value are necessary to enter the treasure rooms, bag as much treasure as possible, and hope that the way out of the labyrinth leads to Mexico.

Here it was, the pillar of then-modern technology that was the Plato, networked to other Platos all over North America through a host in Chicago long before CompuServe ever crawled out of the labyrinth that is Ohio; and here was a medical student who may one day perform brain surgery on me, being engrossed in successive battles with characters from McDonald's French Fry patch—battles which literally consisted of questions like "1 = Fight, 2 = Run Away." I was beginning to think the secret of a successful computer game was the BASIC-language function A = RND(2).

Let the record show it has taken nine long years before someone decided to add the slightest degree of strategy to the old labyrinth game. In Dungeon Master, each labyrinth is a puzzle with unique elements which are much more of a challenge to one's reflexes, intuition, and memory. The game's graphic depth is such that the player will find herself skeptical of every little crack in the wall.

As in Ultima III, you or your party of players can take up to four "character" roles. You choose your roles in a rather poetic fashion: by walking through a hall of mirrors, looking at each character in the mirror and seeing if he/she/ fits your style. There are 24 people stuck in those mirrors whose appearances are not unlike Raquel Welch, Robert Conrad, Chewbacca, Pandit Nehru, Mr. Clean, Kilroy, or Woof the Wonder Dog. Once you've selected your roles, you can name them whatever you want. The default names—like "Syra, Princess Wizard"—are generally too epic for my taste. I prefer names like "Bruce," "King Al," or "Menthol, Wizard of Schick."

The three most important characteristics of each role in the game are health, stamina, and "mana" or magic ability—not the bread that falls from the sky. Mummies, [illegible] barbarians, and squid-like [illegible] that lurk in debris are all [illegible] your health. Running around dark caves without much food or rest is [illegible] on one's stamina.

Dungeon Master deserves special commendation for finally giving definition to "magic" in a game. Whereas other games offer access to about three spells—"resurrect," "heal," and "cancel"—DM offers, by my estimate, 10,584 possible spells ranging from "turn the light on in here" to "make me a quick cup of coffee." Magic spells are cast by selecting symbols—which appear to be zodiac signs from another star system—from a window on the right-hand edge of the screen. The game manual describes this as selecting syllables for an incantation. The meanings for these symbols aren't described in any detail by the manual; instead it's up to you to wait until you're surrounded by squid and then go poking around the syllable table to see what works and what doesn't.

Photographs from the alpha, beta, and perhaps zeta versions of DM (some of which you'll find on the back of the box itself) show clearly that this polysyllabic spell table was a feature added in the game's late stages of development; before then, the only source of magic appears to have been a wand which a character may find along the way, perhaps jammed between the rotting mortar of the bricks in the cave walls. Strangely enough, the wand remains in the final version of the game, along with "magic boxes"—both of which have very limited usefulness compared to the spell table, so I wonder why they remain.

Like most games of the "fantasy" genre, the capabilities of each character are based on an "experience points" system, whereby the more often you

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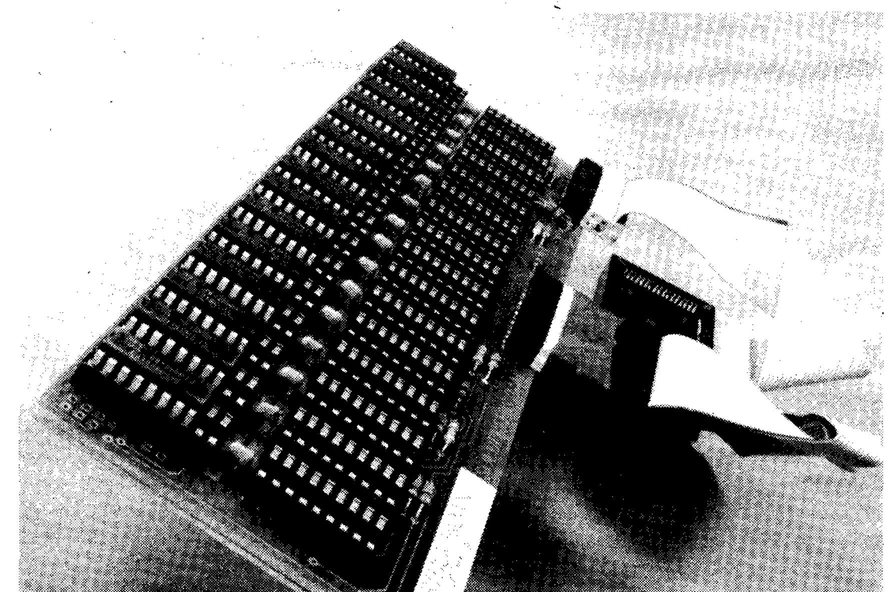
Bad/Good News For Atari ST Memory Upgrades



E. Arthur Brown Co. has released some bad news regarding their 1-4 Meg Upgradeable ST Solderless RAM upgrades but hopes improvements in the design will cushion the blow. The bad news is that RAM chip costs have nearly tripled since the Solderless RAM was introduced last year. The fallout has forced a price increase to $249.95 on the original fully socketed one meg upgrade board. The price of an empty 1-4 meg Solderless RAM board has remained the same at $169.95.

The good news is that the ST Solderless RAM II is now shipping. The new design incorporates two foolproof and safe connection points. The user merely removes his MMU chip from its socket, plugs it into the new improved "MMU Adaptor Board," and plugs the adaptor board safely into the original MMU socket. Next, the user removes [illegible] chip from its socket and pl[illegible] the new "Shifter Chip Adapt[illegible] He then plugs the adaptor [illegible] back into the original shifter chip socket, replaces the 520ST keyboard and [illegible] and the installation is finished.

More good news is that fr[illegible] Disk and Spooler Software is [illegible] This, in addition to the [illegible] sting software pre- [illegible] every board. [illegible] scribing the ST [illegible] and other Atari ST products is available. Contact E. Arthur Brown Company, 3404 Pawnee Drive, Alexandria, MN 56308, or phone 612/762-8847. ●

ATARI

Applying The Atari

by Jeff Brenner

Atari's long awaited 300/1200 baud modem for the 8-bit Atari, the SX212, is now on store shelves, and many Atari owners have been quick to put the new modems to the test. The SX212 features full Hayes compatibility, an SIO port (for connection to Atari 8-bit computers), and RS-232 port (for connection to Atari 8-bit computers), built-in speaker, and the Hayes standard array of eight LED's. You'll need to get a terminal program on your own to start using the modem. Patches have already been written for the popular terminal program Express! to allow the program to function properly with the SX212. Additionally, a program called R-Verter will allow the SX212 to use many 850 interface programs. The SX212 retails for $119.95.

It's reassuring to see that Atari Corp. has come through with a promised 8-bit compatible product, even if the company is trying to grab other markets as well (the unit is advertised as compatible with "all Atari, IBM, IBM-compatible and RS-232 equipped computers"). Let's just ho[illegible] the XF551, Atari's double sided, double density disk drive, with the new ADOS, soon becomes reality as well.

Reader Requests

Dear Jeff:

Could anyone tell me of the existence and location of software, public domain or commercial, that would enable me to perform Bowling League Secretary duties with an Atari 800?

Richard Cooke
Kincheloe, Michigan

Any of several database programs would probably suit your needs, but I am printing your request in the hopes that a reader with a similar application can describe what software has worked best for him or her.

Dear Jeff:

I own an Atari XE Game System. I have been trying to program the Lightgun but without any success. It works with a small amount of lightpen software but not very well. Do you or any of your readers know how to program the Atari Lightgun?

Paul Strutz
Bismarck, North Dakota

I haven't had a chance to examine the Lightgun for the XE game system, so I can't determine to what degree the Lightgun is similar to the lightpen. Since the Lightgun does work with some lightpen software (albeit poorly) the difference may lie solely in the more elaborate design of the Lightgun. Perhaps a reader can offer some information?

Responses to Readers' Requests

Dear Jeff:

In regards to a reader's plea for information on the XL parallel bus, I recommend that he purchase the Microport-XL, an expansion kit implementing a R6520/6821 PIA. It's a bargain at $12, and includes a bare board, connector and documentation on R6520. It also includes schematics for a clock and an EPROM programmer, including sample assembly language programs. It's available from Best Electronics, 2021 The Alameda, Suite 290, San Jose,

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SANYO

Sanyo MBC 550/555 Sources

by Fred Blechman

This article is intended to be an oasis of information in the barren world of both old and new Sanyo MBC 550/555 microcomputer owners. It will cover sources for hardware, and software, and tell you about two active user groups that each have over 150 disks full of programs for the Sanyo.

The Sanyo MBC 55X

If you own a Sanyo MBC 550 (one single-sided floppy drive), 550-2 (one double-sided floppy drive), 555 (two single-sided floppy drives), or 555-2 (two double-sided floppy drives), then I think you have one of the best MSDOS microcomputers ever offered in the United States. Of the nineteen micros I've owned, this is still my favorite.

The design is sturdy (you can even put a heavy color monitor right on top of the main unit), the keyboard has a marvelous feel (although it lacks the ALT key—a fatal design error!), and the graphics are far superior to IBM CGA (640 by 200 pixels in eight colors at all times).

However, for all intents and purposes, this is an orphaned machine. Production stopped almost two years ago when the 550/555 fell into disfavor because it wouldn't run many IBM PC or MSDOS programs (usually because they were not written specifically for the Sanyo's graphic screens). Instead, Sanyo changed their newer models (775, 885, 990 and others) to offer a high degree of IBM PC/MSDOS compatibility, and dropped the 550/555 (hereafter called 55X).

With the drop in prices for IBM PC compatible machines, many original Sanyo 55X owners have upgraded and sold or given away their 55X. The "new" 55X users often don't get the original Sanyo documentation. Even if they do, the original documentation left much to be desired.

As time has gone on it has become more and more difficult for Sanyo 550/555 owners to get information and programs for their machines. Most of the original sources for Sanyo 55X programs and hardware have gone on to support the IBM PC and its close compatibles, leaving the 55X owners to fend for themselves. The few remaining 55X vendors have a difficult time finding owners. Hopefully, this article will help bring together the buyers and sellers.

Background

When the Sanyo MBC 550/555 first became available in late 1983, it was promoted by mail-order dealers as "85% IBM PC Compatible," although

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UNIX

Unix And Jane Fonda

by John Blair

Did the title of this month's column catch your eye? It was meant to. The analogy is not too far fetched. For many years Jane Fonda was in bad repute because of her political views and now, primarily due to her "how-to" books and videos on exercise, she is enjoying an upsurge in popularity.

The same may be said about Unix. Born 20 years ago, Bell Labs, for years it has been a commercial outcast, categorized as an academic model of an operating system for computer hackers, gurus, and what are known as Unix wizards. Now all of a sudden Unix is everybody's Playboy centerfold. The bookstores have their shelves overflowing with programming manuals on the Unix "C" programming language. In the last few months, Unix manuals, supposedly user-friendly, have taken up whole walls in some computer-oriented bookstores. It may be that the new Federal government agencies and armed forces contracts that call for bids on Unix system have given rise to this newly invigorated Unix marketplace.

Two Good Unix Books

I have looked at every Unix book published in the last two years. The majority of the ones I leafed through were just rehashes of the original AT&T manuals. The one general exception is the series of publications by the Waite Group on both Unix and the C programming language.

The two books that pass muster in my opinion are:

1) *Understanding Unix: A Conceptual Guide*; Groff and Weinberg, Que, 1988, 2nd edition, 234 pages

2) *Unix: The Complete Reference*; Coffin McGraw Hill, 1988, 704 pages

The superficial difference between the two approaches is that the first book is more of an introduction and overview. The second book, at 704 pages, is the most thorough and up-to-date treatment I have seen anywhere.

I heartily recommend you purchase them both and keep them by your 386-based computer. I say 386 because that is really the only sensible platform for serious Intel Unix po[illegible] You can get Xenix 386 (the best non-AT&T commercial version) for a growing number of 386 machines. The two best machines for Xenix 386 ar[illegible] Compaq 386/16 or 386/20 and the IBM PS/2 Model 80/16 or 80/20. I have both the Compaq 386/16 and the IBM Model 80/16. They both are good machines. There are more Unix applications currently available for the Compaq 386/16 (or a reputable 386 clone) than for the still relatively new IBM Model 80/16. However, IBM's official AIX Unix for the Model 80 will be shipping in September and SCO Xenix 386 already has a special version for the Model 80.

AT&T And The 6386 WGS

The 6386 WGS (desktop 16 MHz) and the 6386 WGS E (floor standing 20 MHz) machines are, without a doubt, the most highly optimized Unix machines available in the workstation (non-minicomputer) market. The 6386 WGS has a separate review elsewhere in *Computer Shopper*, so I will not go into a lot of detail in this column. It uses the very latest System V Rele[illegible] 3.1 (with some features of Re[illegible] and the fastest 386 CPU and 387 floating point coprocessor that I have reviewed to date. It outperforms both the Compaq 386/16 and the IBM PS/2 Model 80 on virtually every Unix benchmark. It also has built-in extensive networking capabilities (Remote File Sharing or RFS) that can be used with network interface cards from Microm/Interlan (TCP/IP cards and software) or, in the near future, with simple twisted pair telephone wire in a Starlan network.

The 3B2 Heritage

The line of AT&T computers that is most comprehensively supported by all sorts of software goodies is the 3B2. The original 3B2, model 300, was the first totally Western Electric (former manufacturing arm of AT&T) designed machine. 3B2s use the Western Electric 32-bit CPU which is optimized to carry out Unix operations. The original model 300 is now almost four years old and, by today's standards, is a painfully slow machine. A slightly enhanced model 310 came out soon thereafter.

The real jump in computing power was seen with the 3B2 model 400, which seems about 10 times faster than the original 300 (this is a subjective observation, not a benchmark result). In addition the latest 3B2 400 has System V Release 3.1—a brand new upgrade for System V that is laden with much-needed and impressive features,

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SANYO

Sanyo MBC continued from Page 207

establish a percentage of compatibility? Many dealers got carried away with the similarities between the Sanyo 55X and the then-very-expensive IBM PC, and chose to promote the similarities and overlook the differences.

In late 1963 an IBM PC with monochrome and color ports, 640x200 monochrome graphics, Centronics parallel port, one 5¼" floppy disk drive, keyboard, power supply and 64K onboard RAM, MSDOS 1.25, BASIC, MicroPro's WordStar, CalcStar and IUS's EasyWriter-1 would have cost about $4000. The Sanyo MBC 550, which included all of the above plus 640x200 with eight colors and 128K RAM, had a "suggested list price" of only $999! Many mail order dealers included a monochrome monitor at no extra charge. Although the disk drive was single-sided, this still made the Sanyo MBC 550 an incredible bargain and by far the least expensive entry into the MSDOS world.

For only $400 dollars more (list price) you got a second single-sided disk drive and more MicroPro software (DataStar, ReportStar, InfoStar, EasyWriter-2), and 256 RAM instead of 128K.

Aggressive mail order dealers kept dropping the price as they competed with each other. MSDOS 2.11 and 360K double-sided floppy drives quickly became available, and the 55X was the strongest competitor to the IBM PC by early 1984. (The Tandy 1000 and 2000 were not yet available.) Programmers jumped into action to support the colorful Sanyo high-resolution graphics and the simple-but-powerful BASIC.

Sanyo Marketing

Early in 1984 I contracted to write a book about the Sanyo MBC 550 series. I received considerable help from the staff at Sanyo Business Systems in Moonachie, New Jersey. The marketing team then in charge, aggressively promoted the 55X and was largely responsible for its initial success in computer stores and through mail order outlets, and then later through cable TV outlets.

Users generally agreed that the Sanyo 55X was a terrific machine, but the documentation that came with it was not intended for beginners. My book, *Sanyo MBC Beginner & Intermediate Guide* was written to fill this gap. Although the book manuscript was completed and sent to the publisher in July of 1984, it was not printed and distributed until eight months later, in March of 1985. By then a lot of users had given up out of frustration in trying to learn to use their 55X, and had put their machines aside.

During this period, Sanyo Japan apparently decided they had a real winner, and started designing add-ons to make it more compatible with the IBM PC. However, they looked unkindly on the heavy discounting offered by the mail order houses. It seemed they did not want the Sanyo name associated with heavy discounting.

In early 1985 Sanyo announced a new marketing team at Sanyo Business Systems Computer Division in Moonachie. The original marketing team, which had so successfully launched the 55X, was decimated. This was the first step in the demise of the 55X.

The new marketing concept was to allow only five authorized regional distributors (called "Master Supply Organizations"—M.S.O's) who would only sell to dealers that operated from stores, and that apparently agreed to hold retail prices. It appeared that the idea was to stamp out mail-order dealers on the premise that only a "legitimate" dealer (store) could provide the proper support to purchasers. Mail order dealers were cut off unless they found a "gray market" source to supply them.

This new restrictive marketing policy was a major element in sounding the death knell for the 55X. Most prospective buyers couldn't find a nearby store to buy from—and if they did, most dealers didn't know anything about the 55X anyhow! Sanyo at Moonachie was painfully understaffed to provide technical help (poor Mark Zeiger was inundated!) and Sanyo Japan was no help at all.

The final nail in the 55Xs coffin was the increased awareness by users and potential purchasers that the 55X would not run a lot of IBM PC software—even with the "Video RAM Board" (also called the "Lotus Board") released by Sanyo in late 1984 to allow the 55X to run Lotus 1-2-3.

Restrictive marketing and non-IBM compatibility combined to drastically reduce 55X sales. This deflected creative programmers and hardware designers to other more lucrative endeavors—like the IBM PCs growing user base.

Then and Now

In the early days of the Sanyo 55X, many hardware and software manufacturers and vendors supported this new machine. Hardware such as double-sided and quad-density floppy drives, extra memory chips, RS-232 serial boards, joysticks and even hard disk drives became available. After the Video RAM Board was introduced by Sanyo (and found to be lacking in some features), others produced boards that not only offered higher IBM PC compatibility (though nowhere near 100%) but also increased the RAM to 640K and beyond.

Software vendors responded to user clamor for more power and provided all sorts of programs and assorted disk operating systems (A-OKs various DOSs, MichTron's DS-DOS+, several upgrades of Sanyo MSDOS). This, plus all the evolving hardware configurations, created an enormous amount of confusion among 55X users. It now required the proper combination of hardware, software and DOS for a program to run properly. Compatibility with IBM PC programs was improved, but always uncertain without trial.

Partially because of the inadequate Sanyo documentation, and because of the confusion generated by the new add-on hardware and upgraded software, many Sanyo 55X User Groups formed around the country. Some of these produced impressive newsletters that included numerous programs, tips, problems and solutions. Most of these are gone now—but two strong ones remain.

In 1984 and 1985, many color graphics and busi[illegible] programs were created to utili[illegible]he superior capabilities of the [illegible] *Soft Sector Magazine*, a new, slick monthly devoted exclusively to the 55X, was produced starting in August of 1984. *Computer Shopper* magazine started a special monthly Sanyo column devoted to the 55X. I wrote many, many Sanyo 55X articles for both of these magazines.

Soft Sector and *Computer Shopper* had lots of mail-order advertisers, articles and columns about the Sanyo 55X—until Sanyo's new marketing

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ATARI

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CA 95126, (408) 243-6950. The company also puts out an exceptional technical hardware catalog.

Dan Campbell
Burlington, Ontario

Dear Jeff:

Because of hardware and operating system differences, an unmodified 5200 game will not run on an Atari 400/800/XL/XE computer.

In the Atari computers, the GTIA and POKEY hardware chips are decoded at $D000 and $D200. In the 5200, they're decoded at $C000 and $E800. The ANTIC chip is decoded at $D400 in both.

Shadow registers for the hardware chips have been moved in the 5200 operating system (which is the only 2K in length, occupying memory from $F800 to $FFFF). The shadow for the start of the display list is at locations $5 and $6 in the 5200, as opposed to $230 and $231 in the computer, for example.

The last reader who wrote you about this mentioned that a 5200 game chip, when installed in a computer cartridge, wasn't acknowledged by his Atari when inserted (it entered the "self-test" mode). The problem lies in the value stored at cartridge byte $BffC. In the co[illegible]r, any non-zero byte at $BFFC is a[illegible]l to the operating system that no cartridge is installed, so it will either proceed to boot DOS, enter the "self-test" mode, or enter the "memo pad" mode. In the 5200, cartridges made by Atari use $BFFC and $BFFD to store the final two digits of the program's copyright year. This information is transferred to the opening title screen, which is generated by the operating system (or bypassed if the value at $BFFD is 255).

On disk I have modified and unmodified versions of the 5200 operating system (which can be inserted into a computer cartridge and disassembled using "Omnimon") and the 5200 version of "Breakout." The modified (all references to $C000 and $E800 altered) O.S. and "Breakout" run properly, in terms of graphics and sound, on an XL/XE computer, but there is yet another problem—controller incompatibility. Game options, game start and even game reset can be initiated by pressing certain keyboard combinations, but the paddle trigger will not release a ball for play (the joystick button will, though). In addition, turning the paddle control to the right will move the on-screen paddle to the left, and vice-versa. It also takes only [illegible]ery short twist of the paddle control to move the paddle

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UNIX

Unix & Jane Fonda continued from page 207

including some of those in the upcoming System V Release 3.2.

Among these features is the ASSIST program that leads you by the hand through the intricacies of Unix commands and the more commonly used of its 200 some odd built-in utilities. There is even an interactive demo of the universally praised VI (visual editor) screen-oriented editor that puts DOS programs such as WORD and WORD PERFECT to shame (well, not really, but from a programmers standpoint VI is THE most powerful editor in existence).

A comprehensive HELP facility summarizes the purpose of many of the Unix commands and gives examples. There is also an administration module for HELP that enables you to write your own HELP screens. If you simply type HELP, a menu of choices and subchoices comes up. HELP is much more user-friendly than the older version found on early Unix releases, invoked with the MAN command. The MAN command simply brought up online versions of the rather terse and cryptic printed manual pages from the original System 7 documentation. These manual pages served as reminders of the complicated syntax of Unix Commands, but did little to tutor the first-time user.

Documentation for the 3B2 400 is the best I have ever seen in 20 years of working with computers. Not only is it comprehensive and voluminous, but it is well organized into separate tomes that cover related topics. Each module is explained and illustrated with profuse examples. All instruction is of the hand holding step-by-step variety. The manuals match what is online on the computer word for word—which is a welcome relief after seeing many operating systems and even applications programs whose manuals don't exact-

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ATARI

Applying The Atari continued from page 210

completely across the screen, making game play next to impossible.

A die-hard hacker might be able to overcome the controller problem, I suppose. At any rate, it seems like old Atari went out of its way to make the 5200 and the computer totally incompatible.

Bill Hicks
Newport News, Virginia

Thanks for the technical information on the differences between the 5200 and the 8-bit computers. Many individuals have assumed that since both the game machine and 8-bit computer used the 6502 chip and identical hardware chips (i.e. GTIA, POKEY and ANTIC) that the two would be software compatible, and that Atari's desire to make 5200 cartridges incompatible with the computers went only as far as redesigning the cartridge housing so as to make it physically impossible to plug a 5200 cartridge into an Atari computer. But as you have explained, there was quite an effort made to assure incompatibility. Not only did Atari redesign the operating system and boards for the 5200 (perhaps saving a couple of ROM chips), but every software program ported over from the 8-bit Atari had to be modified to work properly on the 5200. Game controller differences are something I didn't even consider when the reader explained how he attempted to run a 5200 cartridge on his 8-bit computer, but the differences in the controllers alone suggest numerous software and hardware incompatibilities. In light of the specific differences you mention, I would recommend that anyone attempting to utilize 5200 cartridges on an 8-bit computer, abandon the effort, unless, of course, the challenge is irresistible. The task would necessitate transferring the 5200 cartridge code to disk, since the program itself would have to be modified. Writing a "5200" operating system for the XL/XE (as a RAM operating system) so as to allow the general use of 5200 cartridge ROMs, while conceptually appealing, does not appear feasible due to the relocated hardware registers. Incidentally, the cartridges for the new XE Game Machine are fully compatible with the 8-bit Atari computers, since the game machine is essentially a 65XE computer.

Dear Jeff:

In the February issue of *Computer Shopper*, Robert Davis was asking for a VT-100 emulator. I believe that the program he is looking for is a public domain program called "VT 10 Squared." This program has an 80 column display that works well without any special hardware. It's not perfect though. XL/XE users must use a translator and people who use ICD's P:R Connection (instead of the 850 interfaced) may have to modify the program. "VT 10 Squared" will work with any modem including the 835/1030/XM301 direct connect modems.

W.J. Ener
Hemphill, Texas

Have A Request?

If you are seeking an answer to a specific problem concerning the 8-bit Atari, looking for a particular software product or attempting to solve an obscure compatibility problem, there's a good chance that another Atari owner has been through your ordeal and could provide you (and all of us) with some valuable information. That's the concept of the "Reader Requests" section, and it has been working quite well. If your request is interesting enough, it will be published in the column to let other readers have a go at it (unless of course, I've got the answer). On the other side of the coin, if you can answer one of the requests published here or can provide a better answer to one published, or even if you've come across some 8-bit information or programming tip that others would be interested to hear, please write and share it.

Newsletter Contest Winner

The selection of a "best" newsletter is becoming harder and harder as more and more excellently designed newsletters have been pouring into the office. This month the award goes to the *Michigan Atari Magazine*, or MAM, the collective newsletter of a number of Michigan Atari users groups (TAG, GRASS, GAG, CHAOS, MACE, G-KAUG, BCAUG, and WAUG). MAM is just one example of how the combined resources of two or more area users' groups can prove enormously advantageous to all participating members. Most notable about the February 1988 issue is that it is almost exclusively member written, with only one article of the forty-page magazine having been reprinted from another newsletter, and its new appearance, which boasts a glossy cover and a professionally typeset look. February articles included a review of Graphics Transformer, "An Introduction to MIDI," hints on protecting your BASIC programs, reviews of new 8-bit public domain software, an article on adding the missing monitor outputs to the 600XL, and a DOS 2.5 modification of ANALOG's Disktool Rev. 3. The newsletter also contained news relating to each of the individual member groups. For subscription information, contact Unicorn Publications, 3487 Braeburn Circle, Ann Arbor, Michigan 48108, (313) 937-8825.

Does your users' group publish a newsletter that is among the best, or THE BEST? Send it in! Winning newsletters are selected based on those sent to me in care of *Computer Shopper*, PO Box F, Titusville, FL 32781. As mentioned in previous columns, submissions should be current newsletters and will not be considered if more than two months behind the month of receipt.

Next Month

We'll take a look at the newsletter honorable mentions, answer reader mail, and take a look at the Six System Box, a useful new device from Irata Verlag Software and Hardware Development.

Readers' questions, comments and contributions are welcome. Address all correspondence to: Jeff Brenner, c/o *Computer Shopper*, Applying The Atari, PO Box F, Titusville, FL 32781. ●

TIMEX/SINCLAIR

Sinclair Survival continued from page 208

to during the game. Choice number one (QUIT GAME) is what you would choose if you could not continue at the present and either wanted to abandon the game or save it for a future date. Option two (PASS 1 TURN) would be used only towards the end of a game as it is a forfeiture of your current move—usually due to the inability to create a word. Earlier in the game you would select option number six (explained later on). Choice number three will show which squares on the board are premium squares. It will show you which symbols represent double letter value, triple letter value, double word score and triple word score. Menu choice number four will display each letter of the alphabet and the score each of those tiles carry. The number of tiles contained in the game is shown when option number five is selected. Your choice of selection number six (as mentioned earlier) becomes necessary when you cannot make any words and there are tiles left. By making this selection, you may exchange any or all of your tiles for fresh tiles and a fresh chance on your next turn. Sometimes a simple thing like juggling the order of the tiles in your rack may help you to discover possible words to place, and choice number seven does this for you. You may use this feature as many times as you wish (time permitting if you are playing against the clock) until you get an idea. If all of this still does not help you, choosing number eight will have the computer search for and suggest a word or words that you might use. Keep in mind, though, that if you are playing with a time limit, the time the computer requires to find the word(s) [illegible]ggest will be charged against you[illegible]e.

As much as I like to believe that letting my children play games such as Scrabble on the computer is educational, there is the traditional (?) arcade type game which is the most popular with the younger members of my household. One such game for the QL is Eidersoft's version of Karate.

For those of you who have never seen the arcade version of this game, you control a Karate master through a number of challenges and opponents. Initially it is a one on one battle between Karate masters, but as you defeat your opponents and go to progressively higher levels, you may find other challenges coming your way. Both you and your opponents start each match with a finite amount of energy which, once expended, causes the contestant's demise.

Although you cannot compete directly against another human player, you can specify how many players wish to play the game, and each human will take his turn against computer opponents and then each player can compete with the others in the points earned in the game.

This game can either be controlled via the keyboard by using a combination of the arrow keys and the space bar, or by using a joystick connected to your QL.

Thanks to the excellent graphics capabilities built into the QL, the animatio[illegible]s superb and can keep the non-Karate enthusiast interested in this software as well as Karate devotees. The graphics abilities [illegible]ake for some well designed arcade ga[illegible]es, which we will have a look at in future columns. What are your favorites? ●

SANYO

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Sanyo Business Systems never made this claim. For one thing, how do you team effectively assassinated the Sanyo 55X mail-order business, the largest 55X market.

Both *Soft Sector* and *Computer Shopper* saw decreasing 55X ad revenues in 1985 and 1986. *Soft Sector* switched over to becoming a PC/compatibles magazine in 1986 and then quit publication completely in 1987. *Computer Shopper* discontinued its monthly Sanyo column in 1987, and now has only occasional 55X articles.

Sources

Only a few die-hard vendors now support 55X users. Sanyo offers token support in the form of a catalog of IBM PC programs that run on the 55X. A few vendors still offer hardware and software support, and two user groups provide lots of public domain and shareware programs that run on the 55X for only $4 a diskfull.

Here, according to the latest information I have, are the survivors.

Sanyo List

Sanyo Business Systems Corporation, Computer Division, 51 Joseph Street, Moonachie, NJ 07074. (201)440-9300

Sanyo's Compatible Software Catalog, May 1985 ($3): 16 pages of software titles (with company name, address and phone number for each) tested to run properly on various 55X configurations. Eight additional insert pages cover replacement disks, compatibility upgrade list, service manuals, and add-ons. Every Sanyo owner should have this.

Multi-tronix, Kent L. Schepler, 3210

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FTL Warps

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wield your sword, the better you become at swordfighting. Here is where, in most games, a conflict exists between the experience the game says you have and the experience you know you have. Assume, for example, you have arcade-honed reflexes; and in the game you're playing, fighting a beast requires more than pressing "A" a lot until either you or it dies. You would be entering the game with experience, but the program will compensate for your skill by imposing a time delay because, in its eyes, you're not supposed to be that good yet. Execution of the objective is an exercise in the achievement of adequacy. Since the time delay is set to decrease as your character gains experience points, the game responds sooner to your input. Thus the game grows easier instead of more challenging.

Dungeon Master views experience in a different light. For instance, a "neophyte" wizard gains experience by practicing a few spells. The first few incantations may fail, but at least the game is kind enough to tell you if a wizard is casting a legitimate spell. As the wizard obtains a knack for turning the light on, the syllables he would add to that spell to start a bonfire become gradually more available to him. Likewise, as a fighter gains experience points with her sword or axe by hacking away at such things as purple worms with teeth, the game offers her more ways to use that weapon—some fighting methods are more effective with particular monsters than with others.

The real prizes in this game are not the destruction of monsters but the acquisition of keys and treasure chests, generally by virtue of your team's position in the labyrinth. Imagine each level, with its open rooms and narrow corridors, like the game board in Clue. Your party of four in this model would be represented by a single wooden token occupying one square. Each single monster is like a token cut in half, occupying half-a-square, or just enough space to block passage through a corridor one square wide.

Monsters can travel in bunches of up to four, so the maximum space they can occupy is two squares. If your party of four can lead a group of monsters into a room bigger than two squares wide—and there are quite a few of those—you can then steer your party around these monsters and forge ahead. Unlike other fantasy games, you can take a running stab at your targets and then back off—in fact, the game is intelligent enough to add wounding force to such a charge.

Here is the dichotomy of objectives this strategy presents: Though the game is won by collecting the prize objects, experience points are gained by hacking away at things—which, as our model points out, doesn't appear to be the point of the game. However, if you're too swift (i. e., too good) and avoid too many monsters, your lack of experience points could send your party into the Great Beyond—which is nowhere near Mexico—in the lower, more difficult labyrinth levels. So to survive at times, you must cast aside positional strategies and fight enemies just for the sake of fighting them.

Dungeon Master's major achievement is in the graphics department. An ingenious mathematical compaction scheme was used, squeezing over a megabyte of data onto a single 360K disk—the only one in the package. Although the load time is reminiscent of the cassette drive on the Commodore PET, the variety of objects depicted on the screen at various angles and magnifications, along with the mouse-driven graphic input system, are DM's crown achievement. So many different types of trap doors, gates, keys, buttons, and hidden switches are utilized that the player never becomes too familiar with the game.

Although DM is a pattern game which requires an extra bit brutality

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The ST Control

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market during the summer was just simply disastrous for them, and they're not sure what Atari's doing with its price increases. 1987 was certainly turning "tumble-some," I guess you could say.

As far as the industry as a whole goes, I see a couple of winners, such as Publishing Partner from SoftLogik—they seem to be a winner out of this whole thing. We've seen some losses too—Batteries Included is gone, and they were some of the more staunch Atari supporters. As far as Atari, they seem to be posting profits still, although I'm pretty sure that most of that is coming from overseas. I know that domestically they've decided not to advertise after all; and instead of trying to promote their dealer channel, they decided to buy Federated [Group Electronics Stores]. Certainly for the dealers, this couldn't have been a great year. For the software companies, it's probably been a mixture.

For the industry as a whole, including all the other companies like the IBM-compatibles, Macintosh, and all of them, I think it's been a very good year. We've seen the end of the software recession of '85 and '86; and it's painting a bright picture for other computer systems for '88 and '89.

David Beckemeyer: It's been mixed. Our company has gone through a lot of growth this year; and of course with growth you get a lot of problems, growing pains. The Atari market was not phenomenal this year, so we didn't experience phenomenal growth in sales of Atari products. From that point of view, I didn't see any major changes. Basically it was steady, but not fantastic.

For computers in general, it seems like we're right in the middle of a another transition period, where the multi-user, multi-tasking, 32-bit hardware is becoming more mainstream; and the older 8088, and other 8-bit/16-bit processors and single-user operating systems that went along with them, are pretty much at the tail end of their careers. I think we are in the middle of this phase; and with new hardware from IBM, I think the market is in a funny state now. I think new hardware purchases are going to be viewed as risky at this point, because no one really knows for sure which direction things are going. It's going to be the people at the cutting edge who probably set the direction.

Gordon Monnier: It was definitely a good year for Atari. They made all kinds of money. After "Bloody Monday," their stock took a deep dip; but up until then, their stock was doing real well. MichTron as a whole did real well. I think we've doubled our sales of last year at this point. We're very profitable. I would like to have seen Atari sell twice as many computers, so we could sell twice as much software. That would've really helped. I guess you live with what you've got. [As for] computing in general, I think we've had a good year. People are getting more and more involved in computers. We've had a very good year, and I'm happy.

Dan Moore: From DataPacific's side, it's been a great year. We've shipped a lot of products. We've made it through the first year of the company. We've grown a lot; we're now shipping the Translator. Effectively the ST is a Mac now, in all ways that matter. For Atari, I think it's been a pretty good year; they've shipped a bunch of stuff. They also showed a bunch of vaporware; but then, that's the way they run the company. Whether that means anything in the long run, I don't know. They did show they had enough money to go buy a store chain so that they could guarantee distribution. That's something.

With production of the ABAQ scheduled to begin in March, and wide-scale distribution of the IDRIS alternative ST UNIX-like operating system already proceeding, we'll be checking back with our Control Panel for their opinions on how these and other important issues affect them and you. We hope you'll be checking in with us. ●

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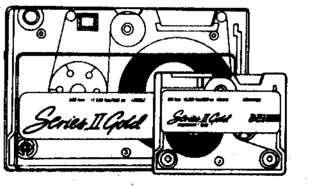

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FTL Warps

continued from page 380

in order to survive, time is of the essence (a phrase enscribed on one of the walls on Level 3) and your party of four will always be kept on the ball. I recommend playing it with three of your closest friends, since this game invites social cooperation. Remember to have them bring their chain mail.

Don't Fry The Guys

I loved Oids from the moment I saw its little men, just five pixels tall by three wide yet shaded extremely well, running over the mountains waving their arms, and jumping up and down like brine shrimp performing aerobics. I watched the little guys for quite a while, since the fellow playing wasn't about to turn over the joystick. Oids, by Dan Hewitt, in premise as well as promise, is a captivating game.

The coin-op game which Oids resembles most closely is Atari Games' Gravitar, the great-grandchild of Asteroids in which your familiar A-shaped ship is reassigned from the asteroid belt to several planetary systems, to systematically snuff out hostile gun turrets and capture fuel modules. If Oids were released as Atari Games' coin-op sequel to Gravitar, it would be praised as a worthy successor.

In Oids, gravity pulls your ship down—not necessarily toward land as in Gravitar—although particular enemy objects called "gravitoids" situated along the landscapes may actually bend gravity, pulling you toward them or pushing you away from them. If you've ever wondered what it would be like to be a meteorite in an intergalactic pinball game, bouncing off of hanging rocks like so many bumpers, here is your chance.

Your ship is equipped with expendable, rechargeable shields; an expendable fuel supply; bullets which seem to drain little bits of fuel; and a handful of super-explosive megabombs which can catalyze a chain reaction of explosions among several targets. Planets are generally equipped with friendly full-service fuel tanks, but without the free wash with every fill-up.

The objective of Oids is to rescue the guys below and return them safely to your mothership—and here is where the game resembles Choplifter. The guys are imprisoned in little huts which appear to have been built by Eskimo wasps. To free the guys, you carefully destroy the huts with one pellet of gunfire. One too many pellets could burst one of your dear rescuees into flames, incinerating his every sinew, and casting his ashes into the barren, raster-generated wind. If your heart actually shows signs of disassembly after watching these aerobicizing pixelline guys go up like flash paper, just try to envision them in your mind as microscopic Richard Simmons clones—it eases the pain considerably.

After the guys are free, you must search for a flat place to land your ship. Once the guys have waved your way down, they will climb every mountain, ford every stream, dance across the valleys, 'til they find your ship. You have a maximum passenger load of eight; so if you have to leave a few guys behind and pick them up later, they'll probably jump up and down and be a bit teed off, but they'll be safe unless you accidentally shoot them or run into them.

After you've made your topological bus stops for eight guys, you must then make your way back to the point where your ship was spawned by your mothership—not unlike a salmon in spring—to be picked up by her obtrusive silver fork. Never let it be said your mother doesn't have a sharp tongue.

Standing in-between you and your objective are more classifications of enemies than were concocted by the Jihad. There are spherical silos which launch heat-seeking missiles, hexagonal things which deploy ball bearings which seek you out faster than missiles, two types of automatic gun turrets, buried proximity mines, and—not to be forgotten—the enemy homebase. This gargantuan, often overshielded complex can launch floating proximity mines, Harrier jets, flying saucers, more of those heat-seeking missiles, and two types of floating gun turrets. Then there is the enemy mothership herself, who can launch all those things and still move around in space like a propulsive submarine sandwich.

One of Oids' brilliant special touches is the teleports. These are bright red, friendly-looking domes which your ship can safely fly into, to be magically transferred to a completely different location just above any other teleport of the same color code as the one you flew into. You enter the teleport at one angle, and reappear over the other at exactly the reverse angle. Oids' recognition of the teleport is as a functional device, not just a hole in space; not only does your ship pass through teleports but your bullets and bombs as well, in the same manner. Ever heard of sending long-distance gifts to your friends by FTD? Now you can send gifts of a sort to your enemies by FTL.

Although Oids the Game is in itself the most addictive item conjured by man since Dr. Pepper was offered in three-liter bottles, what can be even more enjoyable is Oids the Planetary Construction Set. Each copy of Oids has its own planet editor, with which you can drop down chunks of planetary terrain like marble blocks, and then place gun turrets, gravitoids, refueling stations, trees, or prison cells literally anywhere you want—even suspended in air or embedded in solid rock. You can have pieces of land floating in mid-air.

This editor is slick. A small portion of a landscape can be drawn using one of the game objects as a cursor—the cursor takes the shape of an object to be placed onto a landscape. Then, after a group of objects are in place, the cursor can be moved into space, and pressing "P" will make the cursor into a test ship. Control can be toggled between the editor and the tester so that the planetary architect can perfect all the tricky angles, thoroughfares, and traps.

The skilled planet-builder—a person deserving of more experience points than Dungeon Master will allow—can save a catalog of his best planets as his own personal galaxy. FTL gives this person permission to distribute that galaxy among friends or by modem; and even has a cash-prize contest for the best galaxies submitted directly to FTL. I'm still busy designing the galaxy "Diefskaloid," which includes planets designed with respect to and named for my favorite quantum physicists—planet Heisenberg for its principle of uncertainty, planet Schrodinger for the way its waves send you into a quantum jump like in the Schrodinger equation, and various other relativities.

Although each planet may bear individual strategies which reflect the personal style and character of their creators, there are some universal Oids strategies to note. Your ship can only hold eight guys, but there are usually more than eight scattered in various prisons about the planet. Each prison holds either two or three guys; you can tell how many by counting the windows on the prison domes. You may have to let some guys go and pick them up later; but when your ship goes down in battle, any guys on-board go up in flames (all games have their ups and downs). So it's best that you keep your rescuees aboard for as short a time as possible.

Your mothership waits impatiently until you've rescued eight and only eight guys. My flight strategy, therefore, is to clear a path so there are no enemy emplacements between my mothership's drop-off point and eight guys, wherever they may be. Leave them in prison until it's safe to shoot them out; and remember, to destroy a prison shoot once, not twice, and don't use bombs. I fly by keyboard for greater precision rather than by joystick, since Asteroids has given my right middle "fire" finger more reflexes than I have in both knees.

Oids most brilliantly demonstrates the power of the random element in the computer game. A random element game is one in which your opponent is not your own memory, but the danger of the unique situation you find yourself in at that time. Oids' random element is strong enough that a player can make his own puzzle or paradigm, in essence, and then solve that paradigm while retaining a majority of the challenge it would have were it created by someone else. Imagine creating a crossword puzzle and then solving it yourself. Imagine as well creating your own Dungeon Master level. You'd find your own key so fast, you wouldn't gain any experience from fighting; so in order to gain access to deeper levels, you'd have to engage what little of the random element DM offers—fighting monsters, which is not worthy of a game unto itself.

However, as Ken Uston would've pointed out, the pattern player and the random element player are two breeds of computer gamers; so if you're a pattern person, the Dungeon will be your temporary home for roughly the next year. As for me, I'm off to build another planet. That is, after all, what computers are for. ●

Atari ST Outlook

by D. F. Scott

Rerunning The SeQueL

I met Frank Cohen of Regent Software in May of 1987, at an AtariFest at the Dallas InfoMart. I had spoken with him on the phone a few times before, so I had memorized his gentle, melodic voice—one which could render a list of GEMDOS trap #2 commands like the woodwinds section of a Beethoven concerto. I had projected an image of Frank as a short, bearded fellow in a George Boole Fan Club t-shirt and round, steel-rimmed glasses.

I found Frank that day demonstrating Regent Word II to a man who was probably just now differentiating word processors from food processors. He stood, in his expertly-tailored California pullover shirt, by a conservative estimate, 6’ 2”; had a face which may never have seen whiskers let alone a beard; and just to keep higher thoughts resident in memory as a background process, juggled four bean bags while delivering a flawless sales pitch. He was the embodiment of programming as Zen.

At that show, Frank introduced me and several other businessmen to the Structured Query Language, or SeQueL, a relational database language standard. This was just before the relational database revolution which brought SQL into the forefront of computing discussions—or shall we say back into the forefront. SQL's roots date back to 1969, to a Rand Corporation mathematician named E. F. Codd. For 12 years, Codd's relational algebra theorems remained in the realm of theory—like ALGOL—until IBM transported it into the practical realm in full at last in 1981, with DB2—the first fully-relational database language system for mainframes and minicomputers.

In 1986, Frank Cohen was among a handful who, mindless of each other's efforts, brought relational theory to microcomputers. His Atari ST product, Regent Base, was perhaps the first SQL implementation to utilize a graphic operating environment. Frank's concept was to let the user draw a "form"—like a tax form or an order form—in which data could be entered in various rectangular fields. On each form, the database programmer could include "radio buttons," as they are generally called, which can be used to tell the computer what to do with the data entered in those fields.

Naturally, Frank expected his idea of merging graphic input with relational algebra to be met with success. Before long, though, he was receiving phone calls from the American National Standards Institute. ANSI, which has held firm to its standards on FORTRAN and COBOL for about a decade, was rethinking its position on SQL after seeing the enhancements made to it by Regent Base.

Frank's innovations have arguably spawned imitators— HyperCard is one. Even mighty Ashton-Tate itself has been reported to be considering the production of an SQL database. Frank may have, in his own mellow way which would make Perry Como seem dictatorial, spawned the next great wave in personal computing.

Growing Greyer With Youth

The type of computing we are accustomed to exists in a world of binary states, of equality and non-equality. In fact, when we whittle down all computing constructs to their roots in machine code, we realize all a computer really does is compare two "states" for their equality— for their blackness or whiteness—or negate one state to equal its opposite. Despite what Atari tells you, there are no grey areas at the heart of computing.

Whatever we do with our computers—whether it be tallying corporate expenditures stored in a database or toying with Pinball Construction Sets—is merely a grandiose extension of comparing two states, or Boolean logic, at least from the computer's point of view. We can think of each comparison and negation operation as black and white pieces in a gigantic jigsaw puzzle. Imagine all the puzzle pieces necessary—all the baser machine code instructions required—to comprise the multitude of utilities that is the heirarchical database system dBase III Plus. When you have some spare time, take out your original copy of dBase and print out a directory of each disk, and total up the bytes used by each file—or else buy yourself a database to do it for you.

Here is where E. F. Codd enters the picture. Says Codd, in essence, if you took all the black pieces and white pieces and organized them in just the right way—like the dots on an AP Wirephoto—you'd have at least the appearance of a grey area. More to the point, the same tools which defined only equality and non-equality, if used in succession and repetition enough times, could tell you how one state was like another. Never mind whether or not they're equal, are they similar? A computer by itself can't think in similarities; from its point of view, if the two things aren't equal, to heck with them. But, says Codd, compare these two things logically with respect to enough detail, and you can paint for the computer user an overall picture of similarity, or how these two things relate to each other. As long as the user got the picture, who cares what the computer thinks?

Codd called his concept relational algebra; and at first he wasn't thinking about necessarily applying it to computers, but to the overall frame of logic. Apparently, he felt scientific proof, with its steadfast reliance upon absolute verification, could use a little assistance from implications and relationships. Certain concepts which go way beyond the grasp of tangible reality aren't absolutely verifiable anyway.

I talked to Frank Cohen last February, and he picks up the story from there: "Relational algebra is just standard algebra, except the notation used was for storing objects as cells instead of actual data. A relation is a mathematical term for what a "table" would be; a table is most easily described as like a spreadsheet table, with columns running left to right, and records running up and down as rows. Then you have "couples," which are the components of a relation, and you also have fields, records, rows, stuff like that.

"So what he did, in essence, was design a thing that could be used in a practical format as a database. His idea was, if you could have two tables set up, you should be able to algebraically form a relation between the two different tables, to join them to find the Cartesian coordinates, to find the difference and intersection, and all these other algebraic functions that show you the results of data. On a practical level, it means that you've got a list of people with their invoice numbers and amounts owed in one area of your database, and you've got another area that shows invoice numbers and customer numbers, you should be able to do a number of different things with that information. [Codd] developed the mathematical formulas that make it all work."

Codd's adventure into the logical grey area caught the attention of IBM in 1973. Until then, database systems for mainframe computers (which were all that existed in '73) were stuck with the problem of equality. Because of that, machines were very restricted—sets of data didn't relate to other sets, but mathematically belonged to them, like a tree graph of the officers of a corporation. Never mind the fact that a human could understand the relationship between vice president and CEO; that link had to be physically established for the sake of the computer.

Frank explained all this to me and others in a demonstration of Regent Base he gave in Dallas. Luckily, I had my tape recorder on. "What used to be around," he said, "before the relational approach was created, was something called networking and heirarchical data approaches. Basically what "heirarchical" means is that you start at the top, and work your way down this tree structure. Let's say you have this person's name, and then in a separate field you have his address, and in a separate field his city, state, zip, and all of that. The actual links that point, that connect, a person's name to his address are physical, in that there are actual records—a very structured environment. It doesn't help you if, let's say, you had one group of information where you had a person's name-address-city-state-zip, and another group of information you have a last name of a person and the amount of money that he owes you. With the heirarchical approach, it's real easy to say "Pull up the name of the person and how much he owes me"; it's impossible to say "Pull up the amount and tell me what city this person lives in." You can't go backwards like that.

"What the relational thing does is say you're free to do anything you want. If you want to connect the amounts owed to you by city, you can do that, or the amounts owed to you by last name."

BASIC is a common high-level language with many of the features of heirarchical linguistic database systems, so we'll use it as a model momentarily. Imagine a two-dimensional array variable containing people's personal data, arranged in order of the country these people live in. The length of the array dimensions are insignificant. The objective of our BASIC program will be to generate a numerically-ordered list of the postal codes of all Belgians whose names are spelled like "Cohen."

The first and easiest order of business is to isolate everyone who lives in Belgium. Then a sublist would need to be dimensioned—another two-dimensional array—containing just Belgians' last names, arranged by order of their postal codes. Next on the agenda, we have to find all the names that are like "Cohen." How do we decide just what "like" is? We know the "threshhold of like-ness" must be somewhere between "identical to" and "not identical to," but where—one character off or two? After we've used

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New MegaDrive ST Hard Disk

Supra Corporation, the leading manufacturer of hard disk drives for Atari computers, announces the MegaDrive ST hard disk drive for the Atari Mega ST computer. The MegaDrive ST is a high-performance 20 or 40MB drive that mounts inside the computer's case. The 20MB MegaDrive retails for $649, and the 40MB MegaDrive retails for $1049.

The MegaDrive ST connects to the Atari's internal DMA port, leaving the external DMA port free for additional expansion. Because power for the hard disk comes from the computer's own power supply, there are no unsightly external cables. The MegaDrive also allows full autobooting from the hard disk drive.

The MegaDrive also comes with complete formatting software that allows the hard disk to be divided into as many as twelve different logical partitions. Each partition is treated as a separate drive by the GEM desktop, allowing faster access to individual files and maximum system performance.

For more information contact Supra Corp., 1133 Commercial Way, Albany, OR 97321; (503) 967-9075. ●

Atari ST Outlook

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MID$ to dissect all the letters in every Belgian's last name, can we also accept words which sound like "Cohen?" Do you wish we could call up Dr. Codd on the phone?

If you had the tools of SQL available to you, you could generate this list like this: SELECT POSTAL_CODE FROM TABLE WHERE COUNTRY = "BELGIUM" AND LAST_NAME ^ "COHEN"; ORDER BY POSTAL_CODE Wasn't that easy? "TABLE" takes the place of our two-dimensional BASIC array—which is referred to in SQL programming as a "table." Tables aren't "dimensioned" in SQL lingo, but "created"—a much easier term—with the keyphrase CREATE TABLE. The " ^ " operator stands for "like;" SQL handles all matters of similarities.

The keen-eyed programmer will have noticed by now that all this Belgian-organizing took place without the use of variables. Relational algebra focuses not upon specific variables but general sets. The standard high-level programming language is so specific that it only relates to individual entries in an array at any one time. For instance, in BASIC you could address NAME$(X,Y) but not the entire range of entries in column X or row Y. Four keywords—CREATE, SELECT, UPDATE, and INSERT—comprise the backbone of Structured Query Language, with a mere handful of accessory keywords.

"In 1973," Frank continues, "Codd became an IBM fellow, and he started working on this new relational database product called Ingris. IBM's engineers took the theoretical stuff that Codd developed and called it the Relational Data Base Management System, or RDBMS. That's how everybody refers to it. That was different from what existed, which was mostly heirarchical or networking databases, [which were] prevalent since the early '60s when computers started being used in large scale—I'm talking the phone company, the gas company, all these other people who had tremendous database needs.

"When Codd saw the IBM development of his system, of his mathematical model as something physical, he started writing articles in several of the computer magazines, trade magazines. He eventually set up twelve definitions by which you could call yourself relational—they get really intense. If you can pass those twelve rules, you can consider yourself fully relational. Supposedly, even IBM's product couldn't pass all twelve rules, so he came back and wrote a few other articles that include terms like "minimally relational," and "relational in quality."

IBM later made SQL a part of DB2, its second RDBMS, in 1981. As is the case with nearly all things Blue, DB2 was copied; if imitation truly is the sincerest form of flattery, then IBM is bound to be the most severely flattered corporation in history. Among the early DB2 clones for minicomputers was a product from a company named Fox Research, called 10Base (pronounced "ten-base").

Here is where SQL met Frank Cohen.

Can Sequels Be Better Than The Originals?

"I remember when I was in high school," Frank began his demonstration in Dallas, "I think my highest math grade was a D. I never, never understood why I should learn what it was all about. Now I'm finding that the whole relational standard, the relational model, is based on algebra. It allows you to use select, project, join, union, all this stuff that the teacher tried to drum through my head, and I had no interest in."

Frank walked into the realm of mathematics through the back door, and without having stopped by the arcade on the way. His first successful program was an Atari game called Clowns & Balloons, which featured two clowns jumping up and down on a roling catapult, each sending the other into a lofty, drifting swarm of individual balloons to be popped—not unlike operating a hierarchical database. Then came Sands of Egypt and M*A*S*H, which was delivered with a free one-size-fits-none 4077th t-shirt.

Frank went into business in Los Angeles as a consultant for a company called Silent Radio, which makes those scrolling things, the little. . . well, let Frank describe them: "It's a communications system. You see them in banks; they're little display boards that scroll information across the screen, like news-weather-sports. At the time, they asked me to implement a database for them to make their customer service center run. I said, "Well, I don't know a thing about databases." They said, "You don't have to." They handed me this package, which turned out to be an SQL implementation. So that was my "in" into it; I looked at it, not knowing a thing, never being trained in databases."

The package Silent Radio handed him was 10Base, which sent Frank to the books where he discovered that despite the many years and the thousands of pages that were spent in the development of SQL, little or no attention was paid by the people who mattered, to user interaction. On mainframes, SQL was being utilized as a subset of PL/I, COBOL, assembly code, as well as several other heirarchical or networking database systems already established; SQL often had to borrow its user interaction facilities from them.

Frank pointed out to me, "Even Chris Date, in his book *The SQL Standard* where he explains what the ANSI committee X3H2 passed as a standard, doesn't include things like interactive SQL, so you can't ask it to do a query right now. You have to set it within a program and run a shell around it. So there are some things that are really missing from the standard."

With Interactive SQL, a derivative for large computers, the user could type in a command and have it processed on the spot, like a BASIC interpreter for a micro. But at this time, micros were having a reflexive influence on minis and mainframe networks, by increasing the demand for graphic interactivity. Graphics were already Frank's forte.

By now, Frank had teamed with William Robinson, AtariWriter's author, to form Regent Software; and William's Regent Word was already generating money for the company. "When I was developing Regent Base," relates Frank, "I knew that SQL alone doesn't really sell a database. It's a nice language with which you can develop applications. But I remember what the initial reaction was to text-only programs. Final Word did nothing—mostly—because it was text-only. There are a couple of programs which hit the market and died a couple of months later because they didn't use GEM. GEM this, GEM that—that's all I heard when I started developing this thing.

"So what I did was I created something called a form. A form in Regent Base is a combination of an SQL program and GEM objects. A form is GEM objects on the front, and an SQL program in the back. When I say "front and back," the end user who sees the front doesn't see the program. So he can generate an application that looks more or less like any other GEM application, and yet it can be programmed using that language."

In other words, with Regent Base the SQL operations—simple though they may be in principle—are "transparent" to the user who will only be running the completed applications. Consider a hypothetical working application called the "Regent Base Belgian Postal Code Organizer." On the screen, the user would see a group of rectangular fields, some of which would have been formatted for output of personal data; others appear to be buttons which can be pressed with the arrow pointer and a click of the left mouse button.

In one field, the user can type "Belgium," and in another field, "Cohen." Then she would "press" a button marked "POSTAL CODES." The SQL program, running in the background, would translate this user interaction into the same process we were working with the last time we were investigating the Belgians. We might, perhaps, add a "LIKE" button so we could receive a list of postal codes for Cohans and, perhaps, Conan.

All rectangular fields on the screen, whether they be "edit fields" for the entering of information, or just decorative text, have their own excession number. To refer to a string of alphanumeric text typed into an edit field by the user, the programmer would use that field's excession number, preceded by the "%" character. This way, the user can type "Belgium" in edit field 15 marked "Country," and poke button 21 marked "POSTAL CODE," and the programmer can handle user input like this:

```
USER$; IF USER$ = 21 THEN POST
POST: SELECT POSTAL_CODE FROM TABLE WHERE COUNTRY = %15
```

This version of our code is a bit more complex than the original version, but at least this way the user may type in whatever she wants to, and the program will remain the same. This may not seem such a great achievement to those of us who've only been involved with computing within just the last decade. Realize, though, standard SQL is based strictly upon early computing methodology, where often the only things that were stored at all were data, and the user was the programmer, generating new programs on the fly each time he wanted to run his system.

The terms USER$, IF-THEN, the branching label I called POST for the sake of this model, and even the "%" and semicolon were all additions to SQL made by Frank Cohen in order for Regent Base to be applicable and usable in modern computing. This is why ANSI committee X3H2 sat up and took notice; finally Codd's algebra could work in a situation where the user doesn't have to pull double-duty as programmer.

Frank Cohen: "The actual SQL language itself consists of two components: the Data Definition Language and the Data Query Language. The Data Definition Language consists of commands like CREATE TABLE, CREATE INDEX, DROP TABLE, DROP INDEX, REORGANIZE. All of those commands are used to establish or modify or delete the structure of the tables you'll be using. The other portion of the language is all of the commands that either allow you to do retrieval—INSERT (which means add a record to a table), DELETE, or UPDATE. Those four basic commands are your Data Query Language.

"All of the other stuff, like variables and IF-THEN statements, are completely outside of the original SQL language. Those are things that I added in to make it give you a fuller, more rich programming language that surrounds the SQL stuff. Strictly speaking, SQL is part of the language of Regent Base that lets you do the database manipulation and file queries."

Select Future From World Where Computers = "IBM"

The product definition of Regent Base thus far, when discussed on the market and in trade magazines, has been rather ambiguous. To call it a "database" doesn't do justice to its inherent programming features, and puts the product in a category alongside "mail merge" utilities and pure data storage/retrieval programs. That day in Dallas, Frank spoke for about a half-hour, jamming as much information as he could into that space of time; and the very first question he accepted from the audience was, "If you were just going to use this as a mailing list, why would this be better than, say, Haba MailMerge?"

Instead of telling the guy off—which I may have done—Frank gracefully expanded the scope of his question, answering it like this: "Let's say you had something specific in mind, like you wanted to mail to a certain group of people based on demographic information. With this, you could easily [set up a group] if the person's male or female, making over $30,000. Once you've created a database, if you need to move information from one table to another, there are commands that let you set up a sublist."

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Atari ST Outlook
continued from page 383

In April, Frank will be releasing Regent Base SQL 2.0: A Fourth-Generation Language for the ST. Frank took a cue from me and added "SQL" to the title, so I feel I've earned my merit badge. It seems there may already be enough numbers and categories in the world for there to be introduced generations of languages—though not enough for ANSI's X3H2 (translated, most likely: third floor, second door on the left past the men's room).

Frank explains the meaning of "generations:" "First-Generation would be considered like assembly language, machine code. Second-Generation would be like assemblers, utilities that allow you to convert simple nmemonics into machine code. The Third-Generation would be high-level languages like BASIC, Pascal, FORTRAN.

"What a 4GL does for you in today's market is give you access, through some sort of screen [device], to a language that is something like BASIC or Pascal, plus the language has been modified so you have manipulation capabilities with the screen. Products like Fourth Dimension from ACS or Omnis 3 or Regent Base all give you the capability of developing applications on a computer using their own language and their own system, instead of having them get down into something like C code or Pascal where you have to talk to the operating system directly. Supposedly, the real incentive for using this product is that you're saving development time, because you don't have to recreate the wheel every time you decide to develop something."

You could think of language generations like time-space dimensions. They would proceed from single bits to linearity (machine code), to two-dimensional arrays (assembly) to spacial linguistics (BASIC) to sequential relationality (SQL). From there, each generation/ dimension to follow is a new sequence or set of procedures added onto the last set—the fifth dimension is a sequence of time-space dimensions, and will also make the Top 40 Charts in '69.

So what is a 5GL? Frank Cohen: "Supposedly, the Japanese are working on a Fifth-Generation, which is supposed to be a knowledge-based system which is similar to what John Sculley's been talking about in his autobiography, about an "information navigator." You tell it in English statements what you're looking for—it's kind of an artificial intelligence language where, from what you tell it, it will generate its own information, its own commands, and try to process them.

"I'm not sure how information is organized in it, but I know that the Sculley "informaiton navigator" sounds to me like you could say, "Where should I eat tonight?" and it would know enough that it could check to see what your history is, and where you've eaten in the past, or what kind of food you like, and it could figure out what restaurants are closed or too far away, and could generate all that information. You could say, "Based on all the AtariFests I've been to in the past year, what type of food am I in the mood for?" It could take many types of information and generate inferences into what might be possible."

In the meantime, while we're waiting for Macintoshes to dictate our diet to us, Frank will be busy giving 4GL capability to 3GL languages. "Some of the other products," he told me, "that have spawned from Regent Base are like An SQL Database Add-on for GfA BASIC. I'm in the process of writing one for LDW BASIC, and I'm also writing one for Atari BASIC. You run a resident program that is loaded when the Atari ST is turned on, and from then on you can call from BASIC the command processor to process SQL commands. The information that it retrieves is stored into BASIC variables. You can call it, and when it returns from the call, all of the variables have been updated with the information.

"I've been getting a lot of letters from people who use Regent Base. A guy wanted a command called "GEM," and when you process a "GEM" command, you type in a filename and then a command tail, and it would run another program. BASIC to run, you would type, "GEM GFABASIC" and the filename to actually run. A lot of the programs will read the command tail. That was just something one of the users asked me to put in, and I did for the next version. Once you've done that, GfA BASIC would have to call the database again, to go the other direction. I wanted to have it so it would call GfA BASIC as a sub-routine, but most ST programs are not that well-behaved. So there's no way of assuming you're going to get a good memory back or a good system back once you've returned from the call."

In 1989, we'll probably be seeing Regent Base ported to the Macintosh, in a multi-user format which will support the new AppleShare local-area networking system. Projecting ourselves forward about a year and a half, we can just make out the first paragraphs of its many reviews. Ah, I could read them now. . . .

"HyperCard is spawning many imitators, and one of them is Regent Base. Carefully-designed to reflect the wondrous magic of HyperCard's splendid visual imagery, its authors have chosen to replace HyperCard's intuitive scripting language with something called Structured Query Language, whatever that is."

Although it may be impossible to establish just who first conceived the idea for the graphically-programmable relational database, let the record show that Frank Cohen had a working graphic SQL system on the market in early 1986—long before HyperCard began its self-acclaimed trek through the magic kingdom of computing. Frank will probably read those first reviews, laugh a few notes which could later be used in a sonata, juggle a few bean bags, and remain content with the knowledge that quality is not a matter of publicity, but of pure, concentrated effort. ●